THE

ONTARIO WATER RESOURCES

COMMISSION

# WATER POLLUTION SURVEY

of the

# TOWNSHIP OF FIELD

1966

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January 1966

DIVISION OF SANITARY ENGINEERING

ONTARIO WATER RESOURCES COMMISSION

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# ONTARIO WATER RESOURCES COMMISSION

## INTRODUCTION

A water pollution survey was carried out in the Township of Field on June 16, 1965. The purpose of this survey was to locate and record all significant sources of water pollution within the township. Such surveys are performed routinely and upon request, by the Ontario Water Resources Commission as a basis for evaluating all existing and potential sources of pollution. Where sources of pollution are found, corrective action is requested by the Commission.

The information received from Mrs.A. Quenneville, Clerk-Treasurer of the Township of Field, and Mr.J.G. Morrison, Plant Manager of Field Lumber Limited, during this survey is gratefully acknowledged.

## I GENERAL INFORMATION

The Township of Field is located in the northwest portion of the District of Nipissing and covers an area of 44 square miles. The population of the township is approximately 1,100 with the main urbanization occurring at the Community of Field, with a population of 800.

Drainage for the township is provided by Clear Lake, Lake Muskosung, the Sturgeon River and its tributaries, Pike River, Tomiko River and Mudcat Creek.

## II WATER USES

### 1. Private Water Supplies

In the absence of municipal supplies, the populace relies on individually-owned wells.

### 2. Industrial Water Supplies

The Field Lumber Limited pumps water from the Sturgeon River for use in the mill and offices. Water is boiled for potable purposes. No pumpage figures could be obtained.

### 3. Recreational

The Sturgeon River's recreational use is fishing. There are no public beaches within the township.

## III WATER POLLUTION

### 1. Sanitary Waste Disposal

Sewage disposal is effected mainly by means of privies although a few septic tanks and subsurface tile field systems exist.

The Field Lumber Limited is serviced with a cesspool located 100' east of the office building. This disposal method poses no apparent water pollution problem.

### 2. Refuse Disposal

The old refuse disposal site, located south of the Community of Field on Highway 64, has been closed by the Department of Health. Old cars and tin cans have been dumped over the crest of a hill and they have spilled towards the Sturgeon River.

A new refuse disposal site has been located on Clear Lake Road. The site does not appear to constitute a possible water pollution problem.

3. Industrial Waste Disposal

The Field Lumber Limited, located in the Community of Field, manufactures red and white pine lumber. Bark from the sawmill is used for fuel and also for fill around the grounds. The sawdust is used for fuel as well. There is no waste discharge to Sturgeon River.

The BA Service Station, located in the Community of Field, has deposited oily wastes on the banks of the Sturgeon River. This could present a pollution problem as these wastes may reach the river.

## IV DISCUSSION OF LABORATORY RESULTS

Water samples were taken from the Sturgeon River and Pike River to determine the presence of polluting wastes. The results of the analyses performed on these samples are appended.

The four samples taken were found to be within acceptable limits thus indicating the absence of polluting wastes.

## V SUMMARY AND CONCLUSIONS

On June 16, 1965, a water pollution survey was carried out in the Township of Field. The township is a rural area with the main urbanization in the Community of Field.

The Community of Field does not have a municipal water works or sewage treatment plant.

Samples taken of the watercourses in the Township of Field revealed that the township was maintaining effective water pollution control measures.

VI RECOMMENDATIONS

1. The Township of Field should continue its programme of water pollution abatement.

2. The BA Service Station should discontinue the discharging of oily wastes onto the banks of the Sturgeon River.

All of which is respectfully submitted.

District Engineer C. E. McIntyre
for H. Browne.

Approved by _____

J.R. Barr,
Assistant Director,
Division of Sanitary Engineering.

bw

Prepared by:

G. Boretski.

# APPENDIX

## SIGNIFICANCE OF LABORATORY RESULTS

The OWRC objectives for surface waters in Ontario are as follows:

5-Day BOD - not greater than 4 ppm.
M.F. Coliform Count - not greater than 2,400 coliforms per 100 ml.

Phenolic equivalents:

Average - not greater than 2 ppb.
Maximum - not greater than 5 ppb.
pH - 6.7 to 8.5.

Adequate protection for these waters, except in specific instances influenced by local conditions, should be provided if the following waste discharge concentrations are obtained:

| Item | Concentration |
|---|---|
| 5-Day BOD | not greater than 15 ppm. |
| Suspended Solids | not greater than 15 ppm. |
| Phenol | not greater than 20 ppb. |
| pH | 5.5 to 10.6 |
| Iron | not greater than 17 ppm. |
| Oil | not greater than 15 ppm. |

## EXPLANATION OF LABORATORY RESULTS

### Biochemical Oxygen Demand (BOD)

The biochemical oxygen demand test indicates the amount of oxygen required for stabilization of the decomposable organic matter found in sewage effluent, polluted waters, or

industrial wastes, by aerobic biochemical action. The time and temperature used are five (5) days and 20°C, respectively.

Solids

The analyses for solids include tests for total, suspended, and dissolved solids. Total solids is a measure of the solids in solution and in suspension. Suspended solids indicate the measure of undissolved solids of organic or inorganic nature whereas the dissolved solids are a measure of these solids in solution.

Land erosion, sewage and industrial wastes are significant sources of solids. Domestic sewage contains about 0.2 lbs of suspended solids per capita per day. Solids in industrial wastes vary with the type of industry.

The effects of suspended solids in water are reflected in difficulties associated with water purification, deposition in streams, interference with navigation, and injury to the habitat of fish.

Turbidity

Turbidity is a measure of the fine suspended solids in water, such as silt and finely divided organic matter. Where suspended solids values approach 20 parts per million or less, the results are usually reported as turbidity in "Silica Units".

## Bacteriological Examination

Coliform organisms are normal inhabitants of the intestines of man and warm-blooded animals. They are always present in large numbers in sewage and are relatively few in number in other stream pollutants.

## Oil and Ether Soluble Materials

These include oil and all other ether soluble materials such as tarry substances and greases. The presence of these pollutants renders water difficult and impractical to treat either for industrial or domestic use. Oils make the stream unsightly and the water unfit for bathing.

Table 1-1

| Sampling Point No. | Description | Date Examined | 5-Day BOD (ppm) | SOLIDS (ppm) | | | M.P.N.* | |
|---|---|---|---|---|---|---|---|---|
| | | | | Total | Susp. | Diss. | Total Coliform Organisms per 100 c.c. | E. Coli per 100 c.c. |
| FS 89.0 | Sturgeon River at bridge 3/4 mile above Crystal Falls | June 16/65 | 0.6 | 84 | 4 | 80 | 43 | 23 |
| FS 93.8 | Sturgeon River downstream from community of Field | June 16/65 | 0.9 | 56 | 6 | 50 | 230 | 93 |
| FS 97.4 W | 12" Ø Corrugated storm sewer outfall | June 16/65 | NO FLOW NOTED | | | | | |
| FS 97.8 W | 12" Ø Corrugated storm sewer outfall | June 16/65 | NO FLOW NOTED | | | | | |
| FS 103.9 | Sturgeon River at bridge south of Desaulniers | June 16/65 | 1.0 | 58 | 4 | 54 | 93 | 23 |
| P - 3.1 | Pike River at Lacroque Street bridge northeast of Field | June 16/65 | 0.9 | 74 | 2 | 72 | 750 | 430 |

* - Test performed by Ontario Department of Health, Regional Laboratories in North Bay.

BASTEDO TWP.

VI

FIELD

FS-103.9

FIELD LUMBER LIMITED

PIKE RIVER

P-3.1

FS-97.8 W

FS-974 W

TOWNSHIP OF FIELD
OLD REFUSE DISPOSAL SITE

V

15 14 13 12 11 10 9 8 7 6 5 4 3 2 1

IV

C N R

FS-93.8

STURGEON RIVER

TOMIKO LAKE

TOMIKO RIVER

GRANT TWP.

BADGEROW TWP.

MUSKOSUNG LAKE

TOWNSHIP OF FIELD
NEW REFUSE DISPOSAL SITE

III

MUDCAT CREEK

MUDCAT LAKE

BAIN LAKE

II

FS-89.0

CRYSTAL FALLS

TANNER LAKE

I

SPRINGER TWP.

**LEGEND**

P-3.1 — SAMPLING POINTS SHOWING STREAM AND MILEAGE

FS-97.8 W — LAKE OR STREAM AND MILEAGE AT OUTFALL
TYPE OF OUTFALL — W-STORM SEWER

ONTARIO WATER RESOURCES COMMISSION

# TOWNSHIP OF FIELD
## WATER POLLUTION SURVEY

SCALE: 0 1/2 1 MILES

DRAWN BY: W.R.E. DATE: AUGUST 1965

CHECKED BY: DRAWING Nº: 65-102